Leary
307621


```
=> fil reg; s transglutaminase?/cn; s collagen ?/cn
FILE 'REGISTRY' ENTERED AT 16:25:59 ON 22 MAY 96
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 1996 American Chemical Society (ACS)

STRUCTURE FILE UPDATES:  18 MAY 96   HIGHEST RN 176483-81-1
DICTIONARY FILE UPDATES: 22 MAY 96   HIGHEST RN 176483-81-1

TSCA INFORMATION NOW CURRENT THROUGH DECEMBER 1995

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.
```

-key terms

```
L13          23 TRANSGLUTAMINASE?/CN


L14         250 COLLAGEN ?/CN

=> fil ca,caplus
FILE 'CA' ENTERED AT 16:26:11 ON 22 MAY 96
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 1996 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'CAPLUS' ENTERED AT 16:26:11 ON 22 MAY 96
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 1996 AMERICAN CHEMICAL SOCIETY (ACS)

=> s (l13 or transglutaminase# or trans glutaminase# or
(protein(1a)glutamine)(s)glutamyl?) and (collagen(3a)(3 or iii) or l14)
L15          17 FILE CA
L16          17 FILE CAPLUS

TOTAL FOR ALL FILES
L17          34 (L13 OR TRANSGLUTAMINASE# OR TRANS GLUTAMINASE# OR (PROTEI
                N(1A) GLUTAMINE)(S) GLUTAMYL?) AND (COLLAGEN(3A)(3 OR III)
                 OR L14)

=> dup rem l17; d 1-17 .bevstr; fil
biosi,medl,embas,lifesci,biotechs,wpids,confsci,dissabs,scisearch,jicst
PROCESSING COMPLETED FOR L17
L18          17 DUP REM L17 (17 DUPLICATES REMOVED)


L18  ANSWER 1 OF 17  CA  COPYRIGHT 1996 ACS              DUPLICATE 1
AN   124:30443  CA
TI   Method for producing protein sheet molding material
IN   Date, Tatsuya
```

Searcher : Shears 308-4994

leather by crosslinking and binding of proteins in presence of **transglutaminase** and/or lysyl oxidase)

L18 ANSWER 2 OF 17 CA COPYRIGHT 1996 ACS DUPLICATE 2
AN 123:74872 CA
TI Action of cell-surface receptors changing the main characteristics of cellular function, and medical applications thereof in atherosclerosis, diabetes, cancer, and other disorders
IN Zagyansky, Yuly
PA Fr.
SO Fr. Demande, 309 pp.
CODEN: FRXXBL
PI FR 2711318 A1 950428
AI FR 93-11198 930921
DT Patent
LA French
AB From a general process of activity of cell-surface receptors, the principal dogmas of life sciences are revised and clearly reestablished. As a result, more universal new processes and structures are established, e.g. protein kinase C vesicles, the Ca-K(Ca) wave, propagation of cell signals to DNA, etc. Consequently, the process of creation of basal lamina and organs; the structure of contact inhibition; cardiac, skeletal, and smooth muscle action; cell motility; attachment and penetration of bacterial and viral toxins; etc. have also been clearly established. Mol. origins of, and prepns. against, major disorders (diabetes, dystrophy, scurvy, rickets, etc.) are included. The finished accordance from all the given principles and very different domains again confirms the incontestable validity of findings advanced over a half-century. Included are 44 schematic diagrams and 1514 refs.
IT **9001-12-1**, Collagenase **80146-85-6**, **Transglutaminase**
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(cell-surface receptor action in changing main characteristics of cellular function, and medical applications thereof in atherosclerosis, diabetes, cancer, and other disorders)

L18 ANSWER 3 OF 17 CA COPYRIGHT 1996 ACS DUPLICATE 3
AN 124:220476 CA
TI Depth of the essential characteristics of the signal transmission process starting from the cell surface, and their medicinal applications in atherosclerosis, diabetes, cancer, scurvy, rickets, and other conditions
IN Zagyansky, Yuly
PA Fr.
SO Can. Pat. Appl., 320 pp.
CODEN: CPXXEB
PI CA 2139676 AA 951225

Searcher : Shears 308-4994

which the matrix particulates are components with a bioabsorbable polymer (e.g. collagen).

IT **80146-85-6, Transglutaminase**
RL: BIOL (Biological study)
(connective tissue particulates crosslinking with, in dermatan sulfate and fibronectin presence, graft tissue in relation to)

IT **9001-12-1**, Collagenase
RL: BIOL (Biological study)
(in connective tissue matrix prepn. for graft tissue)

L18 ANSWER 5 OF 17 CA COPYRIGHT 1996 ACS DUPLICATE 5
AN 120:215711 CA
TI Controlled enzymic treatment of wheat proteins for production of hypoallergenic flour
AU Watanabe, Michiko; Suzuki, Takashi; Ikezawa, Zenro; Arai, Soichi
CS Fac. Educ., Tokyo Gakugei Univ., Koganei, 184, Japan
SO Biosci., Biotechnol., Biochem. (1994), 58(2), 388-90
CODEN: BBBIEJ; ISSN: 0916-8451
DT Journal
LA English
AB Both salt-sol. and salt-insol. fractions of wheat flour have allergenicity, but their treatment with actinase, collagenase, and **transglutaminase** produced hypoallergenic flour. In detail, hard flour and soft flour were mixed with water contg. either of these enzymes and then incubated at 20.degree. to obtain hypoallergenic flour products. Min. amts. of the enzymes necessary to minimize the allergenicity were lower in soft flour than in hard flour, and in this sense the former was the best material. The product resulting from the treatment with collagenase or **transglutaminase** retained some high-mol.-wt. proteinaceous components, suggesting that for food processing these may be preferable to the product resulting from the treatment with actinase.

IT **9001-12-1**, Collagenase **80146-85-6, Transglutaminase**
RL: BIOL (Biological study)
(wheat flour proteins response to treatment with)

L18 ANSWER 6 OF 17 CA COPYRIGHT 1996 ACS DUPLICATE 6
AN 118:20861 CA
TI Specific ligation of surface .alpha.-D-galactosyl epitopes markedly affects the quantity of four major proteins secreted by macrophages
AU Warfel, Alwin H.; Zucker-Franklin, Dorothea
CS Med. Cent., New York Univ., New York, NY, 10016, USA
SO J. Leukocyte Biol. (1992), 52(1), 80-4
CODEN: JLBIE7; ISSN: 0741-5400
DT Journal
LA English
AB Activated macrophages (M.vphi.s) have terminal .alpha.-D-galactosyl

study indicates that FXIII modifies the structural organization of the synthesized products of fibroblasts and may partially protect them against proteolytic degrdn.

L18 ANSWER 8 OF 17 CA COPYRIGHT 1996 ACS DUPLICATE 8
AN 113:130030 CA
TI Lipoprotein binding of crosslinked type **III collagen** aminopropeptide and fractions of its antigen in blood
AU Bowness, J. Michael; Tarr, Alan H.
CS Dep. Biochem. Mol. Biol., Univ. Manitoba, Winnipeg, MB, R3E OW3, Can.
SO Biochem. Biophys. Res. Commun. (1990), 170(2), 519-25
CODEN: BBRCA9; ISSN: 0006-291X
DT Journal
LA English
AB When 125-I-labeled bovine type **III collagen** aminopropeptide (PIIIP) is incubated with tissue **transglutaminase** (TGase) mixed with hyperlipemic rabbit plasma and subjected to ultracentrifugation the labeled fraction with d. <1.2 g/mL is larger than when either lipoprotein or TGase is omitted. Chromatog. of the fraction with d. <1.2 g/mL shows the presence of peaks which are not present in the denser material. Since their elution positions indicate that they have higher mol. wts. than PIIIP it is concluded that they consist of 125I-labeled PIIIP which has been crosslinked by TGase and bound to lipoprotein. Low concns. of similar low d., high mol. wt. PIIIP antigens were found in normal human plasma and pooled sera from angiog. subjects. In two out of seven infarct patients an unusually large fraction of the PIIIP antigen in the serum was found in a very high mol. wt. peak contg. low d. material. It is speculated that this may arise from atherosclerotic lesions.

L18 ANSWER 9 OF 17 CA COPYRIGHT 1996 ACS DUPLICATE 9
AN 111:37072 CA
TI **Transglutaminase**-catalyzed cross-linking: a potential mechanism for the interaction of fibrinogen, low density lipoprotein and arterial type III procollagen
AU Bowness, J. Michael; Tarr, Alan H.; Wiebe, Rick I.
CS Fac. Med., Univ. Manitoba, Winnipeg, MB, R3E 0W3, Can.
SO Thromb. Res. (1989), 54(4), 357-67
CODEN: THBRAA; ISSN: 0049-3848
DT Journal
LA English
AB Bovine type III procollagen or its [125I]aminopropeptide were shown by chromatog. under dissocg. conditions to form very high-mol.-wt. compds. with excess bovine fibrinogen after incubation with purified tissue **transglutaminase**, though none is formed with other major plasma proteins. Larger compds. of this type formed from

AN 106:115642 CA
TI Identification of a substrate site for liver **transglutaminase** on the aminopropeptide of type **III collagen**
AU Bowness, J. Michael; Folk, J. E.; Timpl, Rupert
CS Fac. Med., Univ. Manitoba, Winnipeg, MB, R3E 0W3, Can.
SO J. Biol. Chem. (1987), 262(3), 1022-4
CODEN: JBCHA3; ISSN: 0021-9258
DT Journal
LA English
AB The aminopropeptide of type **III collagen** incorporates [3H]putrescine in the presence of liver **transglutaminase**, and the change in incorporation with concn. indicates 1 binding site on each of the 15,000-mol.-wt. subunits of the peptide. At low concns., the incorporation was comparable to that of di-Me casein and much greater than actin or fibrinogen. Cleavage and Edman degrdn. of the aminopropeptide identified the major putrescine-binding site as glutamine in position 14. The surrounding amino acid sequence (Leu-Gly-Gln-Ser) shows homol. with some synthetic peptide substrates of **transglutaminase.**
IT **80146-85-6, Transglutaminase**
RL: BIOL (Biological study)
(**collagen** type **III** aminopropeptide substrate site for, of liver, identification of)

L18 ANSWER 12 OF 17 CA COPYRIGHT 1996 ACS DUPLICATE 12
AN 107:3173 CA
TI Cartilage fucoproteins with sites for cross-linking by **transglutaminase**
AU Bowness, J. Michael
CS Fac. Med., Univ. Manitoba, Winnipeg, MB, R3E 0W3, Can.
SO Biochem. Cell Biol. (1987), 65(4), 280-5
CODEN: BCBIEQ
DT Journal
LA English
AB Slices of various types of cartilage were incubated with either L-[6-3H]fucose or [1,4-3H)]putrescine. Homogenization of the slices and fractionation of the homogenates showed for both labels that an insol. collagenase-resistant fraction had the highest specific activity (dpm/mg dry wt.). Examn. of an exhaustive proteolytic digest of this insol. fraction by ion-exchange HPLC showed the presence of .gamma.-glutamyl[3H]putrescine. Chromatog. of solubilized [3H]fucoprotein fractions showed the presence of several low mol. wt. peaks, as well as high mol. wt. material. Incubation of [3H]fucoprotein exts. with **transglutaminase** increased the high mol. wt. peaks and decreased the low mol. wt. ones. Incubation of the cartilage slices with L-[3H]fucose plus 0.5 mM dansylcadaverine, an inhibitor of **transglutaminase**, caused

SO J. Clin. Invest. (1986), 78(2), 551-6
CODEN: JCINAO; ISSN: 0021-9738
DT Journal
LA English
AB The interaction of the adhesive glycoprotein, von Willebrand factor (vWF), with native monomeric collagen monolayers was studied by adsorbing acid sol. types I and **III collagen** derived from calf skin to polystyrene microtiter wells and incubating the wells with purified human 125I-labeled vWF (125I-vWF). The binding of 125I-vWF was saturable, reversible, specific, and was abolished by heat denaturation of the collagen monomers. Binding was half-max. at 5 .mu.g/mL, and, at satn., 7.5 ng 125I-vWF were bound to each microgram of immobilized collagen. 125I-vWF did not bind to wells coated with other extracellular matrix or plasma proteins such as fibronectin, fibrinogen, gelatin, or the aq. subunit of the 1st component of complement (C1q). In addn., bound 125I-vWF could not be displaced from collagen by the addn. of either fibronectin or fibrinogen. After incubation with factor XIIIa, plasma **transglutaminase**, 125I-vWF bound to collagen could no longer be displaced by vWF, which suggests covalent crosslinking of vWF to collagen monomers. Factor XIIIa-dependent covalent crosslinking of vWF to collagen, but not to fibronectin or laminin, was also demonstrated by SDS-PAGE.

L18 ANSWER 15 OF 17 CA COPYRIGHT 1996 ACS DUPLICATE 15
AN 100:98609 CA
TI Crosslinking of fibronectin to collagenous proteins
AU Mosher, Deane F.
CS Dep. Med., Univ. Wisconsin, Madison, WI, 53706, USA
SO Mol. Cell. Biochem. (1984), 58(1-2), 63-8
CODEN: MCBIB8; ISSN: 0300-8177
DT Journal
LA English
AB Attempts were made to crosslink several collagenous proteins to fibronectin with factor XIIIa (plasma **transglutaminase**). Crosslinking was demonstrated with type I collagen, type II **collagen**, type **III collagen**, type V or AB collagen, and .alpha.1(I)-CB7 and .alpha.1(I)-CB8 CNBr fragments of type I collagen. Crosslinking was not demonstrated with type IV collagen, C1q, and cyanogen bromide fragment .alpha.1(I)-CB6. The pH optimum from crosslinking of .alpha.1(I)-CB7 to fibronectin was 8.5-9.6. Crosslinking of .alpha.1(I)-CB7 to fibronectin was somewhat enhanced at lower than physiol. ionic strength.

L18 ANSWER 16 OF 17 CA COPYRIGHT 1996 ACS DUPLICATE 16
AN 101:109105 CA
TI Peroxidase-catalyzed crosslinking of proteins
AU Matheis, Gunter; Whitaker, John R.
CS Dep. Food Sci. Technol., Univ. California, Davis, CA, USA

are present in collagen, the native conformation of collagen prevents the action of liver **transglutaminase** and factor XIIIa.

'BIOTECHS' IS NOT A VALID FILE NAME
Enter "HELP FILE NAMES" at an arrow prompt (=>) for a list of files that are available. If you have requested multiple files, you can specify a corrected file name or you can enter "IGNORE" to continue accessing the remaining file names entered.
ENTER A FILE NAME OR (IGNORE):end

=> fil
biosi,medl,embas,lifesci,biotechds,wpids,confsci,dissabs,scisearch,jicst
FILE 'BIOSIS' ENTERED AT 16:28:33 ON 22 MAY 96
COPYRIGHT (C) 1996 BIOSIS(R)

FILE 'MEDLINE' ENTERED AT 16:28:33 ON 22 MAY 96

FILE 'EMBASE' ENTERED AT 16:28:33 ON 22 MAY 96
COPYRIGHT (C) 1996 Elsevier Science B.V. All rights reserved.

FILE 'LIFESCI' ENTERED AT 16:28:33 ON 22 MAY 96
COPYRIGHT (C) 1996 Cambridge Scientific Abstracts (CSA)

FILE 'BIOTECHDS' ENTERED AT 16:28:33 ON 22 MAY 96
COPYRIGHT (C) 1996 DERWENT INFORMATION LTD

FILE 'WPIDS' ENTERED AT 16:28:33 ON 22 MAY 96
COPYRIGHT (C) 1996 DERWENT INFORMATION LTD

FILE 'CONFSCI' ENTERED AT 16:28:33 ON 22 MAY 96
COPYRIGHT (C) 1996 Cambridge Scientific Abstracts (CSA)

FILE 'DISSABS' ENTERED AT 16:28:33 ON 22 MAY 96
COPYRIGHT (C) 1996 University Microfilms, Inc.

FILE 'SCISEARCH' ENTERED AT 16:28:33 ON 22 MAY 96
COPYRIGHT (C) 1996 Institute for Scientific Information (ISI) (R)

FILE 'JICST-EPLUS' ENTERED AT 16:28:33 ON 22 MAY 96
COPYRIGHT (C) 1996 Japan Information Center of Science and Technology (JICST)

=> s (l13 or transglutaminase# or trans glutaminase# or (protein(1a)glutamine)(s)glutamyl? or tgase#) and (collagen(3a)(3 or iii) or l14)
L19 15 FILE BIOSIS

Searcher : Shears 308-4994

transglutaminase). The epidermis is anchored in the connective tissue by means of hemidesmosomes whose biochemical nature begun to be elucidated rapidly in recent years. Of the first importance are the HD1 inner plaque protein, supposed to be associated with intermediate filaments, and the transmembrane components in the dense plaque (BPAG2 and alpha 6 beta 4 integrin), whose extracellular domains directly interact with basement membrane components. Though the complete characterization of the basement membrane has not yet been achieved, the molecular catalogue of its three distinct layers is really impressive (laminin, fibronectin, nidogen, kalinin, K-laminin, type IV collagen, heparan sulphate proteoglycan, type **III** and VII **collagen**, ...). Besides numerous mutual interactions, it appears that mainly laminin and kalinin (anchoring filaments) promote binding of epidermal cells. Furthermore, a continuation may exist between anchoring fibrils in the deepest layer and anchoring filaments in the upper layer of the basement membrane. Finally, the lamina propria, a specific type of extracellular matrix, is perhaps the most difficult to dissect, though substantial progress has been made in the last few years (fibronectin, type I, **III**, V and VI **collagen**, fibrillin, ...).

L30 ANSWER 2 OF 28 SCISEARCH COPYRIGHT 1996 ISI (R)
AN 95:62027 SCISEARCH
GA The Genuine Article (R) Number: QA477
TI INCREASE IN EPSILON(GAMMA-GLUTAMYL)LYSINE CROSS-LINKS IN ATHEROSCLEROTIC AORTAS
AU BOWNESS J M (Reprint); VENDITTI M; TARR A H; TAYLOR J R
CS UNIV MANITOBA, FAC MED, DEPT BIOCHEM & MOLEC BIOL, WINNIPEG, MB R3E 0W3, CANADA (Reprint); UNIV MANITOBA, FAC MED, DEPT PATHOL, WINNIPEG, MB R3E 0W3, CANADA
CYA CANADA
SO ATHEROSCLEROSIS, (DEC 1994) Vol. 111, No. 2, pp. 247-253. ISSN: 0021-9150.
DT Article; Journal
FS LIFE
LA ENGLISH
REC Reference Count: 30
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB Portions of aortas from normal and atherosclerotic rabbits and from human autopsy subjects were washed and separated into layers which were subjected to exhaustive proteolytic digestion. The digests were assayed for epsilon(gamma-glutamyl)lysine crosslinks by a two-stage high performance liquid chromatography (HPLC) procedure. Crosslink concentrations in intima-media from rabbits where more than 15% of the aorta lumen surface was lesioned are greater than in normal aortas or aortas with less than 15% of the surface lesioned. Higher crosslink concentrations occur in fibrolipid plaques from human aortas than in intima-media layers of equal thickness from

UNIV BERN, DEPT PATHOPHYSIOL, CH-3010 BERN, SWITZERLAND
CYA SWITZERLAND
SO JOURNAL OF CELL BIOLOGY, (MAR 1993) Vol. 120, No. 6, pp. 1461-1470. ISSN: 0021-9525.
DT Article; Journal
FS LIFE
LA ENGLISH
REC Reference Count: 43
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Calcifying cartilages show a restricted expression of tissue **transglutaminase**. Immunostaining of newborn rat paw bones reveals expression only in the epiphyseal growth plate. Tissue **transglutaminase** appears first intracellularly in the proliferation/maturation zone and remains until calcification of the tissue in the lower hypertrophic zone. Externalization occurs before mineralization. Subsequently, the enzyme is present in the interterritorial matrix during provisional calcification and in the calcified cartilage cores of bone trabeculae. In trachea, mineralization occurring with maturation in the center of the cartilage is accompanied by expression of tissue **transglutaminase** at the border of the hydroxyapatite deposits.

Transglutaminase activity also shows a restricted distribution in cartilage, similar to the one observed for tissue **transglutaminase** protein. Analysis of tissue homogenates showed that the enzyme is present in growth plate cartilage, but not in articular cartilage, and recognizes a limited set of substrate proteins. Osteonectin is coexpressed with tissue **transglutaminase** both in the growth plate and in calcifying tracheal cartilage and is a specific substrate for tissue **transglutaminase** in vitro.

Tissue **transglutaminase** expression in skeletal tissues is strictly regulated, correlates with chondrocyte differentiation, precedes cartilage calcification, and could lead to cross-linking of the mineralizing matrix.

L30 ANSWER 5 OF 28 MEDLINE
AN 93111519 MEDLINE
TI Comparative light-microscopic and immunohistochemical study of traumatic and palisaded encapsulated neuromas of the skin.
AU Argenyi Z B; Santa Cruz D; Bromley C
CS Department of Pathology, University of Iowa Hospitals and Clinics, Iowa City 52242-1009..
SO AMERICAN JOURNAL OF DERMATOPATHOLOGY, (1992 Dec) 14 (6) 504-10. Journal code: 35V. ISSN: 0193-1091.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals

[35S]methionine-labeled proteins were assessed when cells were cultured with or without this ligand. The proteins were identified by Western blots and quantitated. Interestingly, .alpha.-D-Gal ligation proved to decrease the secretion of some proteins while increasing the secretion of others. Some of the most significant changes were observed in four proteins: fibronectin and **transglutaminase** were down-regulated by 55 and 66% respectively, while plasminogen activator inhibitor type 2 was increased by 259% and collagenase was increased 1000-fold. These observations show that the emergence of new oligosaccharide epitopes, such as .alpha.-D-Gal, concomitant with M.diameter. activation may serve to mediate the transduction of signals that cause quantitative changes in the elaboration of diverse M.diameter. products. The biologic significance of the four identified proteins has been well established. Fluctuations in their levels are likely to play a role at sites of chronic inflammation.

L30 ANSWER 7 OF 28 SCISEARCH COPYRIGHT 1996 ISI (R)
AN 92:72393 SCISEARCH
GA The Genuine Article (R) Number: HA691
TI INCREASED **TRANSGLUTAMINASE** IN THE AORTAS OF CHOLESTEROL-FED RABBITS - OCCURRENCE OF BUFFER SOLUBLE AND INSOLUBLE FORMS AND AN INHIBITOR
AU WIEBE R I; TARR A H; BOWNESS J M (Reprint)
CS UNIV MANITOBA, FAC MED, DEPT BIOCHEM & MOLEC BIOL, 770 BANNATYNE AVE, WINNIPEG R3E 0W3, MANITOBA, CANADA
CYA CANADA
SO BIOCHEMISTRY AND CELL BIOLOGY-BIOCHIMIE ET BIOLOGIE CELLULAIRE, (DEC 1991) Vol. 69, No. 12, pp. 821-827.
ISSN: 0829-8211.
DT Article; Journal
FS LIFE
LA ENGLISH
REC Reference Count: 22
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB Rabbits were fed for 10-12 weeks on a normal pellet diet or on the same diet containing 1% cholesterol and 6% peanut oil. The animals were killed and the aortas divided into three layers which were homogenized and extracted. The extracts and the insoluble residues were assayed for **transglutaminase** activity and tissue **transglutaminase** antigen. When compared with normal aortas, the inner and middle layers of aortas with atherosclerotic lesions from cholesterol-fed rabbits showed higher **transglutaminase** activities in the buffer-soluble fraction without a corresponding increase in antigen. The buffer extracts showed two peaks (I and II) of activity and antigen on DE 52 chromatography; peak I was also found, together with lipid, in Triton X-100 extracts of the buffer-insoluble residue. The Triton X-100 insoluble fraction showed higher concentrations of both

contains, among others, collagen I and partially processed precursors (.alpha.1, .alpha.2, pN-.alpha.1, and pN-.alpha.2 chains), **collagen III** and its precursors (.alpha.1 and pN-.alpha.1 chains), fibronectin and FXIII. This study indicates that FXIII modifies the structural organisation of the synthesized products of fibroblasts and may partially protect them against proteolytic degradation.

L30 ANSWER 10 OF 28 MEDLINE
AN 92012099 MEDLINE
TI Immunohistochemical study of the distribution of collagens (type I, III, IV), fibronectin, factor XIIIa and factor VIII related antigen in alcoholic liver disease.
AU Shimazaki Y; Hara F
CS First Department of Internal Medicine, Nippon Medical School..
SO NIPPON IKA DAIGAKU ZASSHI. JOURNAL OF THE NIPPON MEDICAL SCHOOL, (1991 Aug) 58 (4) 74-83.
Journal code: HRD. ISSN: 0048-0444.
CY Japan
DT Journal; Article; (JOURNAL ARTICLE)
LA Japanese
EM 9201
AB Histopathological changes in alcoholic liver disease are characterized by Mallory body, fatty liver, and peculiar fibrosis such as pericentral fibrosis, pericellular fibrosis, stellate fibrosis originating from Glisson's sheath, and swelling of the liver cells. However, the mechanism of fibrosis remains unknown. The author tried to demonstrate, by the immunohistochemical method, fibronectin (FN), **collagen** type I, **III**, IV (IC, IIIC, IVC), factor XIIIa, and factor VIII related antigen (VIII RAg), all of which are related to the process of wound healing, in order to clarify the mechanism of fibrosis in alcoholic liver disease. With the progress of fibrosis, FN was demonstrated in the sinusoidal wall, as well as the portal areas and around the central veins. IC and IIIC were positive in the fibrotic area extending into the lobules and pericellular fibrosis. IVC was similar to FN and was positive in the sinusoidal wall. Scattered XIIIa positivity was recognized in the fibrotic areas, especially in the foci of active fibrosis. VIII RAg was positive in the capillary vessels invading the lobules through the limiting plates. The distribution of these proteins in the fibrotic area in alcoholic liver disease closely resembled that in the wound healing process. It is concluded that fibrosis occurring in the periportal area is essentially the same as in the wound healing process and the mechanism of fibrosis in alcoholic liver disease is thought to be active fibroplasia.

L30 ANSWER 11 OF 28 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 3
AN 90:426446 BIOSIS
DN BA90:87247

collagen were not significantly different. The addition of FXIII (I U/ml) inhibited the synthesis of collagen by normal fibroblasts and reduced it in PSS fibroblasts to a level similar to that of normal fibroblasts. This effect was observed for cells cultured on plastic or in a collagen lattice. In the latter, an increased amount of collagen degradation was observed. No significant effect of FXIII on the other cell functions was noted. Excessive collagen production by PSS fibroblasts can be repressed by FXIII in vitro by at least two distinct mechanisms: a reduction of collagen synthesis and an increased degradation of the newly synthesized collagen.

L30 ANSWER 13 OF 28 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 4
AN 89:353588 BIOSIS
DN BA88:45702
TI **TRANSGLUTAMINASE**-CATALYZED CROSS-LINKING A POTENTIAL MECHANISM FOR THE INTERACTION OF FIBRINOGEN LOW DENSITY LIPOPROTEIN AND ARTERIAL TYPE III PROCOLLAGEN.
AU BOWNESS J M; TARR A H; WIEBE R I
CS DEP. OF BIOCHEM., FAC. OF MED., UNIV. OF MANITOBA, WINNIPEG, MANITOBA, R3E OW3, CAN.
SO THROMB RES 54 (4). 1989. 357-368. CODEN: THBRAA ISSN: 0049-3848
LA English
AB Bovine type III [3H]procollagen or its [125I]aminopropeptide were shown by chromatography under dissociating conditions to form very high molecular weight compounds with excess bovine fibrinogen after incubation with purified tissue **transglutaminase**, though none is formed with other major plasma proteins. Larger compounds of this type formed from fibrinogen or fibrin in monomer can be separated by centrifugation and they are insoluble on washing with 1% SDS. Ultracentrifugation showed that a significant fraction of [3H]procollagen III forms a low density complex on incubation with **transglutaminase** plus excess IDL or LDL, but not HDL. SDS polyacrylamide gel electrophoresis showed that type **III collagen** [125I]aminopropeptide forms high molecular weight compounds after incubation with **transglutaminase** plus excess IDL or LDL but not with HDL. It is hypothesized that, in the presence of excessive concentrations of LDL and/or fibrinogen and of tissue **transglutaminase**, crosslinking reactions of the type demonstrated may interfere with normal injury-repair processes and stimulate the formation of atherosclerotic lesions in arteries.

L30 ANSWER 14 OF 28 BIOSIS COPYRIGHT 1996 BIOSIS
AN 89:162496 BIOSIS
DN BA87:84597
TI INHIBITION OF RETINOIDS OF IN-VITRO INVASIVE ABILITY OF HUMAN LUNG CARCINOMA CELLS.
AU FAZELY F; LEDINKO N; SMITH D J
CS DEP. CHEM., UNIV. AKRON, AKRON, OHIO 44325.
SO ANTICANCER RES 8 (6). 1988. 1387-1392. CODEN: ANTRD4 ISSN: 0250-7005

AB The aminopropeptide of type **III collagen** incorporates (super(3)H)putrescine in the presence of liver **transglutaminase**, and the change in incorporation with concentration indicates one binding site on each of the M sub(r) = 15,000 subunits of the peptide. At low concentrations the incorporation was comparable to that of dimethyl casein and much greater than actin or fibrinogen. Cleavage and Edman degradation of the aminopropeptide identified the major putrescine-binding site as glutamine in position 14. The surrounding amino acid sequence (Lue-Gly-Gln-Ser) shows homology with some synthetic peptide substrates of **transglutaminase**.

L30 ANSWER 19 OF 28 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 7
AN 87:334185 BIOSIS
DN BA84:43128
TI CARTILAGE FUCOPROTEINS WITH SITES FOR CROSS-LINKING BY **TRANSGLUTAMINASE**.
AU BOWNESS J M
CS DEP. OF BIOCHEMISTRY, FAC. OF MED., UNIV. OF MANITOBA, 770 BANNATYNE AVE., WINNIPEG, MAN., CANADA R3E 0W3.
SO BIOCHEM CELL BIOL 65 (4). 1987. 280-285. CODEN: BCBIEQ
LA English
AB Slices of various types of cartilage were incubated with either L-[6-3H]fucose or [1,4-3H]putrescine. Homogenization of the slices and fractionation of the homogenates showed for both labels that an insoluble collagenase-resistant fraction had the highest specific activity (dpm/mg dry weight). Examination of an exhaustive proteolytic digest of this insoluble fraction by ion-exchange high performance liquid chromatography showed the presence of .gamma.-glutamyl[3H]putrescine. Chromatography of solubilized [3H]fucoprotein fractions showed the presence of several low molecular weight peaks, as well as high molecular weight material. Incubation of [3H]fucoprotein extracts with **transglutaminase** increased the high molecular weight peaks and decreased the low molecular weight ones. Incubation of the cartilage slices with L-[3H]fucose plus 0.5 mM dansylcadaverine, an inhibitor of **transglutaminase**, caused a decrease in the insoluble and high molecular weight fraction relative to the low molecular weight peaks. It is hypothesized that this is due to inhibition of cross-link formation between fucoprotein components of the cartilage which are **transglutaminase** substrates. One major low molecular weight peak, which labels with both fucose and putrescine, corresponds in size with the 15,000 subunit of **collagen III** aminopropeptide, which is known to be a substrate for **transglutaminase**.

L30 ANSWER 20 OF 28 MEDLINE
AN 87188954 MEDLINE
TI Components of increased labelling with putrescine and fucose during

fibrinogen. After incubation with Factor XIIIa, plasma **transglutaminase**, 125I-vWF bound to collagen could no longer be displaced by vWF, which suggests covalent cross-linking of vWF to collagen monomers. Factor XIIIa-dependent covalent cross-linkig of vWF to collagen, but not to fibronectin or laminin, we also demonstrated by polyacrylamide gel electrophoresis in the presence of sodium dodecyl sulfate.

L30 ANSWER 22 OF 28 MEDLINE
AN 84167794 MEDLINE
TI Cross-linking of fibronectin to collagenous proteins.
AU Mosher D F
NC HL 21644
SO MOLECULAR AND CELLULAR BIOCHEMISTRY, (1984) 58 (1-2) 63-8.
Journal code: NGU. ISSN: 0300-8177.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 8407
AB Attempts were made to cross-link several collagenous proteins to fibronectin with Factor XIIIa (plasma **transglutaminase**). Cross-linking was demonstrated with type I collagen, type II **collagen**, type **III collagen**, type V or AB collagen, and alpha 1(I)-CB7 and alpha 1(I)-CB8 cyanogen bromide fragments of type I collagen. Cross-linking was not demonstrated with type IV collagen, Clq, and cyanogen bromide fragment alpha 1(I)-CB6. The pH optimum for cross-linking of alpha 1(I)-CB7 to fibronectin was 8.5 to 9.6. Cross-linking of alpha 1(I)-CB7 to fibronectin was somewhat enhanced at lower than physiological ionic strength.

L30 ANSWER 23 OF 28 LIFESCI COPYRIGHT 1996 CSA
AN 84:983 LIFESCI
TI Cross-linking of fibronectin to collagenous proteins.
AU Mosmer, D.F.
CS Dep. Med. Univ. Wisconsin, Madison, WI 53706, USA
SO MOL. CELL. BIOCHEM., (1984) vol. 58, no. 1-2, pp. 63-68.
DT Journal
FS L
LA English
SL English
AB Attempts were made to cross-link several collagenous proteins to fibronectin with Factor XIII sub(a) (plasma **transglutaminase**). Cross-linking was demonstrated with type I collagen, type II **collagen**, type **III collagen**, type V or AB collagen, and alpha 1(I)-CB7 and alpha 1(I)-CB8 cyanogen bromide fragments of type I collagen. Cross-linking was not demonstrated with type IV collagen, Clq, and cyanogen bromide

internalization of receptor-bound proteins may differ for luteal cells and fibroblasts. The mechanisms involved in the internalization of hCG may also differ from those for .alpha.2-macroglobulin and epidermal growth factor.

L30 ANSWER 25 OF 28 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 9
AN 80:228707 BIOSIS
DN BA70:21203
TI CROSS LINKING OF COLLAGEN AND FIBRONECTIN BY FACTOR-XIIIA LOCALIZATION OF PARTICIPATING GLUTAMINYL RESIDUES TO A TRYPTIC FRAGMENT OF FIBRONECTIN.
AU MOSHER D F; SCHAD P E; VANN J M
CS DEP. MED., UNIV. WIS., MADISON, WIS. 53706, USA.
SO J BIOL CHEM 255 (3). 1980. 1181-1188. CODEN: JBCHA3 ISSN: 0021-9258
LA English
AB Fibronectin is a large glycoprotein found in body fluids and media of cultured cells. Insoluble fibronectin is found in tissue stroma and in collagen-containing extracellular matrices of cultured cells. Fibronectin is a substrate for factor XIIIa (plasma **transglutaminase**) and can be cross-linked by this enzyme to types I and **III collagen**. Cross-linking to collagen is inhibited by dansylcadaverine, spermine, spermidine and putrescine. Incubation of human fibronectin, human factor XIIIa and inhibitory concentrations (0.1-0.5 mM) of amines resulted in covalent incorporation of 1-2 mol of amine/2.0 .times. 105 g of protein. Under similar conditions, there was no incorporation of amines into calf collagen. A Mr [MW] = 2.7 .times. 104 fragment of early tryptic digests contained > 90% of incorporated amine; this fragment was diminished in tryptic digests of fibronectin enzymically cross-linked to collagen. The Mr = 2.7 .times. 104 fragment could be separated from the other major components of early tryptic digests by affinity chromatography; Mr = 1.6-1.8 .times. 105 fragments bound strongly to gelatin-agarose, and the Mr = 2.7 .times. 104 fragment, which by itself did not bind to gelatin-agarose, bound weakly to the Mr = 1.6-1.8 .times. 105 fragments. The Mr = 1.6-1.8 .times. 105 gelatin-binding fragments could not be cross-linked by factor XIIIa to types I or **III collagen** or to **collagen** fragments. Of gelatin-binding proteolytic fragments of fibronectin previously reported, a Mr = 7.0 .times. 104 fragment of cathepsin digests contained factor XIIIa-reactive glutaminyl residues; a Mr = 1.8 .times. 105 fragment of thrombin digests, a Mr = 4.0 .times. 104 fragment of chymotryptic digests, a Mr = 3.0 .times. 104 fragment of late tryptic digests and a Mr = 6.1 .times. 104 fragment of neutrophil elastase digests did not. Apparently cross-linking between fibronectin and collagen involves glutaminyl residues in a Mr = 2.7 .times. 104 region of fibronectin and lysyl residues of collagen. Evidently the fibronectin site which mediates strong binding to collagen is distinct from the cross-linking site.

Searcher : Shears 308-4994

.alpha.1(I) chains of type I collagen. Fibronectin could also be cross-linked to types I and **III collagen**, but only at 37.degree. C. .alpha.1(I)-CB7, .alpha.1(I) collagen chains, type I **collagen**, type **III collagen** and fibrin all blocked cross-linking between 125I-.alpha.1(I)-CB7 and fibronectin. .alpha.1(I)-CB7 blocked cross-linking between fibronectin and fibrin. The determinants of fibronectin-fibrin and fibronectin-collagen binding and cross-linking are probably similar. Cross-linking of fibronectin to collagen likely occurs in vivo and may be important for normal wound healing, collagen fibrillogenesis and embryogenesis.

L30 ANSWER 28 OF 28 BIOSIS COPYRIGHT 1996 BIOSIS
AN 80:220925 BIOSIS
DN BA70:13421
TI CHANGES IN **TRANS GLUTAMINASE** ACTIVITY IN AN EXPERIMENTAL MODEL OF PULMONARY FIBROSIS INDUCED BY PARAQUAT.
AU GRIFFIN M; SMITH L L; WYNNE J
CS DEP. LIFE SCI., TRENT POLYTECH., NOTTINGHAM NG1 4BU, ENGL., UK.
SO BR J EXP PATHOL 60 (6). 1979 (RECD. 1980). 653-661. CODEN: BJEPA5 ISSN: 0007-1021
LA English
AB An experimental model of pulmonary fibrosis was developed by dosing rats with 1/5 the LD50 dose of the herbicide paraquat on 5 consecutive days. Approximately 50% of the rats died within 4 days of the completion of dosing, showing macroscopic changes and wet weight increases in the lung consistent with severe edema. Those animals which died between Days 4 and 10 had markedly increased levels of hydroxyproline in the lung, maximum at Day 6, and increased prolyl hydroxylase activity, maximum at Day 4. These changes, together with an increase in thymidine incorporation into DNA, and increased lung DNA content, were consistent with the development of fibrosis. Measurement of **transglutaminase** activity in the lung showed marked increases at Days 4 and 10 after completion of dosing. This activity paralleled closely the changes in prolyl hydorxylase activity and became increasingly associated with particulate protein present in the nuclear pellet fraction. The presence of zymogen plasma **transglutaminase** trapped in lung homogenates could not be demonstrated but the contribution by the active plasma **transglutaminase** (Factor XIIIa) to increases shown at Day 4 cannot be ruled out.

FILE 'CA' ENTERED AT 16:33:14 ON 22 MAY 96

FILE 'CAPLUS' ENTERED AT 16:33:14 ON 22 MAY 96

Searcher : Shears 308-4994

105-mol.-wt. fragments. The 1.6-1.8 .times. 105-mol.-wt. gelatin-binding fragments could not be crosslinked by **factor XIIIa** to types I or **III collagen** or to **collagen** fragments. Of gelatin-binding proteolytic fragments of fibronectin reported by others, an 7.0 .times. 104-mol.-wt. fragment of cathepsin digests contained **factor XIIIa**-reactive glutaminyl residues, whereas a 1.8 .times. 105-mol.-wt. fragment of thrombin digests, a 4.0 .times. 104-mol.-wt. fragment of chymotryptic digests, a 3.0 .times. 104-mol.-wt. fragment of late tryptic digests, and a 6.1 .times. 104-mol.-wt. fragment of neutrophil elastase digests did not. Thus, crosslinking between fibronectin and collagen involves glutaminyl residues in a 2.7 .times. 104-mol.-wt. region of fibronectin and lysyl residues of collagen, and the site of fibronectin which mediates strong binding to collagen is distinct from the site of crosslinking.

L37 ANSWER 2 OF 2 CA COPYRIGHT 1996 ACS DUPLICATE 2
AN 91:155125 CA
TI Cross-linking of fibronectin to collagen by blood coagulation **factor XIIIa**
AU Mosher, Deane F.; Schad, Peter E.; Kleinman, Hynda K.
CS Dep. Med., Univ. Wisconsin, Madison, WI, 53706, USA
SO J. Clin. Invest. (1979), 64(3), 781-7
CODEN: JCINAO; ISSN: 0021-9738
DT Journal
LA English
AB Na dodecyl sulfate-polyacrylamide gel electrophoresis was used to investigate **Factor XIIIa**-mediated crosslinking of fibronectin to collagen. At 0.degree. or 37.degree., fibronectin could be crosslinked to iodinated CNBr fragment 7 of the .alpha.1(I) chain. At 22.degree. or 37.degree., fibronectin could be crosslinked to isolated .alpha.1(I) chains of type I collagen. Fibronectin could also be crosslinked to types I and **III collagen**, but only at 37.degree.. .alpha.1(I)-CB7, .alpha.1(I) collagen chains, type I **collagen**, type **III collagen**, and fibrin all blocked crosslinking between 125I-labeled .alpha.1(I)-CB7 and fibronectin. .alpha.1(I)-CB7 blocked crosslinking between fibronectin and fibrin. Evidently, the determinants of fibronectin-fibrin and fibronectin-collagen binding and crosslinking are similar. Crosslinking of fibronectin to collagen likely occurs in vivo and may be important for normal wound healing, collagen fibrillogenesis, and embryogenesis.

FILE 'BIOSIS' ENTERED AT 16:36:53 ON 22 MAY 96
COPYRIGHT (C) 1996 BIOSIS(R)

Searcher : Shears 308-4994

```
=> s l48 not l29
L49           3 FILE BIOSIS
L50           2 FILE MEDLINE
L51           4 FILE EMBASE
L52           0 FILE LIFESCI
L53           0 FILE BIOTECHDS
L54           0 FILE WPIDS
L55           0 FILE CONFSCI
L56           0 FILE DISSABS
L57           1 FILE SCISEARCH
L58           1 FILE JICST-EPLUS

TOTAL FOR ALL FILES
L59          11 L48 NOT L29

=> dup rem l59
PROCESSING COMPLETED FOR L59
L60            6 DUP REM L59 (5 DUPLICATES REMOVED)

=> d 1-6 bib abs; fil ca,caplus

L60  ANSWER 1 OF 6  EMBASE  COPYRIGHT 1996 ELSEVIER SCI. B.V.
AN   94156489  EMBASE
TI   CD34+ spindle-shaped cells selectively disappear from the skin
     lesion of scleroderma.
AU   Aiba S.; Tabata N.; Ohtani H.; Tagami H.
CS   Department of Dermatology, Tohoku University School of Medicine, 1-1
     Seiryo-machi, Sendai 980, Japan
SO   ARCH. DERMATOL., (1994) 130/5 (593-597).
     ISSN: 0003-987X  CODEN: ARDEAC
CY   United States
DT   Journal
FS   005     General Pathology and Pathological Anatomy
     013     Dermatology and Venereology
     026     Immunology, Serology and Transplantation
LA   English
SL   English
AB   Background and Design: The pathogenesis of scleroderma is still
     unknown. Recently, it has become possible to identify different
     subpopulations of dermal spindle-shaped cells using anti-CD34 and
     anti-factor XIIIa antibodies. To elucidate
     whether entire populations of dermal fibroblasts or only a
     subpopulation of cells are involved in the fibrosis of scleroderma,
     we compared the staining pattern of these antibodies and
     antiprocollagen antibody in paraffin-embedded skin sections from the
     lesions of 27 patients with scleroderma and 15 patients with other
     collagen diseases and from normal skin of 17 subjects. Cryostat
     sections from both involved and uninvolved skin of four patients
```

and, occasionally, connective tissue cells within perineurium and epineurium in normal peripheral nerve fibers express **factor XIIIa** as well as HLA-DR antigen. The results suggest that fibroblastlike cells in cutaneous neurofibromas are probably derived from **factor-XIIIa**- and HLA-DR antigen-positive connective tissue cells in peripheral nerves. The role of such **factor-XIIIa**-positive cells in the growth and development of cutaneous neurofibromas is discussed.

L60 ANSWER 3 OF 6 EMBASE COPYRIGHT 1996 ELSEVIER SCI. B.V.DUPLICATE 1
AN 93011293 EMBASE
TI Comparative light-microscopic and immunohistochemical study of traumatic and palisaded encapsulated neuromas of the skin.
AU Argenyi Z.B.; Cruz D.S.; Bromley C.
CS Dermatopathology Section, Department of Pathology, University of Iowa Hospitals/Clinics, 200 Hawkins Drive, Iowa City, IA 52242-1009, United States
SO AM. J. DERMATOPATHOL., (1992) 14/6 (504-510).
ISSN: 0193-1091 CODEN: AJDODN
CY United States
DT Journal
FS 005 General Pathology and Pathological Anatomy
006 Internal Medicine
013 Dermatology and Venereology
LA English
SL English
AB The primary hyperplastic nature of palisaded encapsulated neuromas (PENs) has been recently challenged by suggesting a traumatic origin. We studied eight cases of traumatic neuroma (TN) and 12 cases of PEN by routine light- microscopic, histochemical, and immunohistochemical methods to assess evidence of previous tissue injury. Sections from the formalin-fixed, paraffin-embedded tissue were stained with hematoxylin-eosin, trichrome, elastic, reticulin, Giemsa, colloidal iron (with and without hyaluronidase), and Bielschowsky silver stains. Antibodies were applied to **collagen** types I, **III**, and IV, MAC 387, **factor XIIIa**, .alpha.1-antitrypsin (A1AT), epithelial membrane antigen (EMA), Leu-7, and myelin basic protein using ABC techniques. We found that (a) in TN the individual fascicles were usually surrounded by perineurial cells, whereas in PEN the perineurial cells were observed mainly in the capsular areas and only rarely within the fascicles as evidenced by EMA antibodies; (b) histochemically TN contained considerably larger amounts of **collagen** (types I and **III**), acidic mucin, and myelin products than did PEN; and (c) neither PEN nor TN contained increased inflammatory cells or cells positive for **factor XIIIa**, MAC 387, or A1AT. We conclude that (a) there are substantial structural and histochemical differences between TN and PEN, (b) the changes suggest that the classic form of PEN has a

SO PATHOL RES PRACT 186 (5). 1990. 633-641. CODEN: PARPDS ISSN: 0344-0338
LA English
AB Bone tumors, which consist largely of fibroblast-like cells, were categorized into ALPase-positive (3 ossifying fibromas and 2 fibroblastic osteosarcomas) and negative (4 non-ossifying fibromas and 5 MFHs) groups. They were investigated as to their ultrastructure and immunophenotype using antibodies of fibroblast markers (**collagen** I, **III**, aminopeptidase M, dipeptidylpeptidase IV and **factor XIIIa**), classical macrophage markers (AACT and AAT) and vimentin. In the case of the ALPase-positive group, fibroblast-like cells showed short, branching rough endoplasmic reticulum with bundles of microfibrils in their cytoplasms. They were often intermingled with osteoblastic cells particularly in proximity to osteoid tissue. Furthermore, these cells expressed fibroblast markers of collagen I, aminopeptidase M, dipeptidylpeptidase IV and **factor XIIIa**. Fibroblast-like cells of the ALPase-negative group more or less revealed phagosomes in addition to fibroblastic features admixed with histiocyte-like cells. They expressed classical macrophage markers, but rarely fibroblast markers. The above findings indicated that derivation from different precursor cells should be proposed between the two groups and that the tumors in the ALPase-positive group might be intimately related to a certain population of the bone marrow stromal cells.

L60 ANSWER 6 OF 6 BIOSIS COPYRIGHT 1996 BIOSIS DUPLICATE 4
AN 90:5704 BIOSIS
DN BA89:5704
TI IMMUNOHISTOCHEMICAL STUDY OF SCHWANNOMA WITH RESPECT TO THE HISTOGENESIS OF ANTONI B AREA.
AU WATANABE H
CS DEP. ORTHOPAEDIC SURGERY, ST. MARIANNA UNIV. SCH. MED., 2-16-1, SUGAO, MIYAMAE-KU, KAWASAKI-SHI, KANAGAWA 213, JPN.
SO J JPN ORTHOP ASSOC 63 (8). 1989. 800-809. CODEN: NSGZA2 ISSN: 0021-5325
LA Japanese
AB Sixty two cases of schwannoma were studied immunohistochemistry and ultrastructurally for further understanding of the histogenesis of Antoni B area. For immunohistochemical study, the author used the antibodies against fibronectin (FN), **factor XIIIa** (XIIIa), and **collagen** type I and **III**. FN and XIIIa were positive with a fibrillar pattern in Antoni B area. **Collagen** type I and **III** were positive in the extracellular matrix of Antoni B area, but not in Antoni A area. Ultrastructurally, Antoni B area consisted of degenerative Schwann cells and fibroblasts. These findings closely resemble those of fibrogenesis seen in the wound healing process or in the stroma around tumor. The author concluded that the fibrogenesis occurring in

(proliferation, attachment, biosynthetic activity and mech. properties) was investigated in vitro using normal and PSS strains. In cell culture, most of the PSS fibroblast strains synthesized excessive amts. of collagen. Other cell functions such as adhesion to **collagen** I or **III**, to fibronectin, retraction of collagen lattices, proliferation in low serum concn. and degrdn. of newly synthesized collagen were not significantly different. The addn. of **FXIII** (1 U/mL) inhibited the synthesis of collagen by normal fibroblasts and reduced it in PSS fibroblasts to a level similar to that of normal fibroblasts. This effect was obsd. for cells cultured on plastic or in a collagen lattice. In the latter, an increased amt. of collagen degrdn. was obsd. No significant effect of **FXIII** on the other cell functions was noted. Excessive collagen prodn. by PSS fibroblasts can be repressed by **FXIII** in vitro by at least two distinct mechanisms: a redn. of collagen synthesis and an increased degrdn. of the newly synthesized collagen.

L67 ANSWER 2 OF 2 CA COPYRIGHT 1996 ACS DUPLICATE 2
AN 108:92309 CA
TI Modulation of cellular biosynthetic activity in the retracting collagen lattice
AU Paye, Marc; Nusgens, Betty V.; Lapiere, Charles M.
CS Inst. Pathol., Univ. Liege, Sart Tilman, Belg.
SO Eur. J. Cell Biol. (1987), 45(1), 44-50
CODEN: EJCBDN; ISSN: 0171-9335
DT Journal
LA English
AB When included in a free-floating collagen lattice, several types of cells and fibroblasts attach to the collagen polymers and retract the gel, and their biosynthetic activity is repressed. Under similar conditions transformed pulmonary epithelial rat (PER) cells are unable to attach to the fibers and to retract the lattice. Retraction can be induced by adding fibronectin (fn) and **factor XIII** (**FXIII**) together. This effect is fibronectin-concn.-dependent and has a max. efficiency for **FXIII** concns. of .gtoreq.0.1 unit/mL. Fibronectin or **FXIII** alone has only a limited effect on retraction. This exptl. model allowed study of the biosynthetic activity of PER cells under various degrees of cell interaction (control < **FXIII** > fn > fn + **FXIII**) with their 3-dimensional **collagen** support. The more the cells interacted with their support and retracted the gel, the ore total protein and collagen synthesis was reduced. Increasing the collagen concn. in a nonretracting lattice to the final d. obtained in a maximally retractd lattice resulted in a much lower repression of biosynthetic activity in the former case. Fn and **FXIII** added at the same concns. in monolayer cultures did not alter biosynthetic activities . The regulation of the biosynthetic activity of

```
L75           0 FILE DISSABS
'CN' IS NOT A VALID FIELD CODE
L76           2 FILE SCISEARCH
L77           0 FILE JICST-EPLUS

TOTAL FOR ALL FILES
L78          20 ((FACTOR OR F)(W)(XIII OR 13) OR FX13 OR FXIII) AND (COLLA
                GEN(3A)(3 OR III) OR L14)

=> s l78 not (l29 or l59)
L79           2 FILE BIOSIS
L80           3 FILE MEDLINE
L81           3 FILE EMBASE
L82           0 FILE LIFESCI
L83           0 FILE BIOTECHDS
L84           0 FILE WPIDS
L85           0 FILE CONFSCI
L86           0 FILE DISSABS
L87           0 FILE SCISEARCH
L88           0 FILE JICST-EPLUS

TOTAL FOR ALL FILES
L89           8 L78 NOT (L29 OR L59)

=> dup rem l89
PROCESSING COMPLETED FOR L89
L90           7 DUP REM L89 (1 DUPLICATE REMOVED)

=> d 1-7 bib abs; fil medl

L90  ANSWER 1 OF 7  EMBASE  COPYRIGHT 1996 ELSEVIER SCI. B.V.
AN   95221404  EMBASE
TI   The interstitial space of the thyroid gland of marmosets (Callithrix
     jacchus).
AU   Maile S.; Merker H.-J.
CS   Institute of Toxicology and Prenatal Pharmacology, Free University
     of Berlin, Garystrasse 5, D-14195 Berlin, Germany, Federal Republic
     of
SO   Annals of Anatomy, (1995) 177/4 (347-359).
     ISSN: 0940-9602  CODEN: ANANEY
CY   Germany, Federal Republic of
DT   Journal
FS   001     Anatomy, Anthropology, Embryology and Histology
     003     Endocrinology
LA   English
SL   English
AB   The interstitial space of the thyroid gland of adult marmosets
     contains, like the stroma of other organs, cells and intercellular
     substance (matrix), blood vessels (predominantly capillaries), lymph
```

different. The addition of **FXIII** (I U/ml) inhibited the synthesis of collagen by normal fibroblasts and reduced it in PSS fibroblasts to a level similar to that of normal fibroblasts. This effect was observed for cells cultured on plastic or in a collagen lattice. In the latter, an increased amount of collagen degradation was observed. No significant effect of **FXIII** on the other cell functions was noted. Excessive collagen production by PSS fibroblasts can be repressed by **FXIII** in vitro by at least two distinct mechanisms: a reduction of collagen synthesis and an increased degradation of the newly synthesized collagen.

L90 ANSWER 3 OF 7 MEDLINE
AN 89217145 MEDLINE
TI Precoating substrate and surface configuration determine adherence and spreading of seeded endothelial cells on polytetrafluoroethylene grafts.
AU Kaehler J; Zilla P; Fasol R; Deutsch M; Kadletz M
CS Second Department of Surgery, University of Vienna, Austria..
SO JOURNAL OF VASCULAR SURGERY, (1989 Apr) 9 (4) 535-41.
Journal code: KD2. ISSN: 0741-5214.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 8908
AB Primary adherence and attachment area of seeded human endothelial cells (EC) were determined on differently coated polytetrafluoroethylene (PTFE) grafts. Cell counts and morphometric analyses were done immediately after 60 minutes of electronically controlled seeding of 3 x 10(4) EC/cm2, as well as after 3 hours of subsequent incubation. Cell adherence and cell spreading were distinctly superior on two surface-covering substrates: fibronectin-treated type I/**III collagen** and fibrinolytically inhibited fibrin glue. Uncovered, purely fibronectin- or laminin-coated PTFE or type IV collagen treated with the specifically binding glycoprotein laminin showed a far lower EC attachment rate and less pronounced cell spreading. It appears that not only a high surface content of fibronectin but also a smooth PTFE-covering matrix are prerequisites for optimal primary adherence and cell spreading. Because fibrin glue might be fibrinolytically degraded despite its plasmin-inhibiting epsilon-amino-caproic acid compound, type I/**III collagen** plus fibronectin could provide an optimal precoating substrate for EC lining of PTFE grafts.

L90 ANSWER 4 OF 7 MEDLINE
AN 84217751 MEDLINE
TI Combined application of heterologous collagen and fibrin sealant for liver injuries.

epinephrine and collagen and the serotonin-release was significantly reduced the 1st days. Significantly increased aggregability and serotonin-release developed after a wk, with peak activity on days 14-16. Most patients still exhibited increased activity at the discharge on days 21-22. Positive ethanol gelation tests developed after day 1 in most patients with a peak at day 5, contemporary with peak activities of factor VIII and negatively correlated to **factor XIII** activity, quantitated biologically. These values were normalized on discharge. Antithrombin III (Xa) remained unchanged, normal to slightly elevated. The fibrinolytic activity decreased after day 1 with lowest activity on day 5, contemporary with peak activity of antiplasmin. Of the patients .apprx. 50% showed decreased activity on discharge.

L90 ANSWER 6 OF 7 MEDLINE
AN 78035803 MEDLINE
TI [Functional reaction of a fibroblast surface protein (author's transl)].
Funktionelle Reaktionen eines Oberflachenproteins von Fibroblasten.
AU Hormann H; Jilek F
SO WIENER KLINISCHE WOCHENSCHRIFT, (1977 Nov 11) 89 (21) 728-9.
Journal code: XOP. ISSN: 0043-5325.
CY Austria
DT Journal; Article; (JOURNAL ARTICLE)
LA German
FS Priority Journals
EM 7802
AB Cold-insoluble globulin (CIG) of plasma represents the soluble form of a fibroblast surface protein. As shown by affinity chromatography it is selectively adsorbed from plasma on immobilized collagen of various types. The following sequence of binding strength between CIG and collagen was evaluated by means of fractionated elution: **collagen** type **III** native less than type I native less than type I denatured. The affinity to native collagen is important for the capability of CIG to mediate the attachement of fibroplasts on collagen fibrils. In addition, CIG is a substrate of activated coagulation **factor XIII** which plays an important, but as yet unclarified role in wound healing.

L90 ANSWER 7 OF 7 EMBASE COPYRIGHT 1996 ELSEVIER SCI. B.V.
AN 78207594 EMBASE
TI [Functional reaction of a fibroblast surface protein].
FUNKTIONELLE REAKTIONEN EINES OBERFLACHENPROTEINS VON FIBROBLASTEN.
AU Hoermann H.; Jilek F.
CS Max Planck Inst. Biochem., Munchen Martinsried, Germany, Federal Republic of
SO WIEN. KLIN. WOCHENSCHR., (1977) 89/21 (728-729).
CODEN: WKWOAO
CY Austria

AB Morphea is an idiopathic disorder the hallmark of which is fibrosis of the skin. The regulatory factors resulting in the increased collagen production have not been determined. Within the dermis there are dendritic cells with possible immunological functions that express either the human progenitor cell antigen (CD34) or factor XIIIa. Immunohistochemical stains for factor XIIIa, CD34, S100, proliferating nuclear cell antigen, and vimentin were performed on 26 skin biopsies from patients with morphea and 11 biopsies from normal skin. A decreased number of CD34-expressing cells was seen in the affected skin from morphea patients, while there was an increased number of cells expressing factor XIIIa and vimentin. We hypothesize that CD34-positive dendritic cells may have a regulatory role in collagen synthesis and that lack of CD34 expression can be used as a marker for morphea.

L91 ANSWER 2 OF 34 MEDLINE
AN 96166818 MEDLINE
TI Cutaneous sclerotic fibroma. Immunohistochemical evidence of a fibroblastic neoplasm with ongoing type I collagen synthesis.
AU Shitabata P K; Crouch E C; Fitzgibbon J F; Swanson P E; Adesokan P N; Wick M R
SO AMERICAN JOURNAL OF DERMATOPATHOLOGY, (1995 Aug) 17 (4) 339-43. Journal code: 35V. ISSN: 0193-1091.
AB The sclerotic fibroma (SF) is a tumor of the skin that may occur sporadically or in the context of Cowden's syndrome. The authors studied four examples of this tumor in an effort to understand better the nature of the fibrous matrix in SF and its significance. A novel antibody was utilized that is directed against the immunoreactive amino-terminal precuror domain of human type I procollagen (AP). This peptide is usually identified only at sites of active or recent collagen synthesis and deposition. All examples of SF showed strong cellular and stromal staining for AP. The matrix also demonstrated variable staining for type IV collagen and laminin. The overall immunophenotype of this lesion suggests that it may be a specialized fibroblastic ("dermal dendrocytic?") tumor. Despite its hypocellularity and hyalinized nature, SF is thought to exhibit ongoing matrical production that supports a neoplastic character for this lesion.

L91 ANSWER 3 OF 34 MEDLINE
AN 96069779 MEDLINE
TI High-resolution structural studies of the factor XIIIa crosslinking site and the first type 1 module of fibronectin [letter].
AU Potts J R; Phan I; Williams M J; Campbell I D
SO NATURE STRUCTURAL BIOLOGY, (1995 Nov) 2 (11) 946-50. Journal code: B98. ISSN: 1072-8368.
AB The N-terminal domain of fibronectin undergoes factor XIIIa-catalysed crosslinking to fibrin, bacteria and collagen. The reactive glutamine residue is in an extended, random coil 'tail' of

high-molecular-weight band (M(r) 240,000) presumably due to intermolecular cross-links of collagen peptides and FN. The serum components also were shown to cause a significant decrease in the volume of the collagen gel. CONCLUSION. Collagen gel contraction could be attributed to the collagen-FN-collagen cross-links catalyzed by TG.

L91 ANSWER 6 OF 34 MEDLINE
AN 95310958 MEDLINE
TI Neurokinin receptors could be differentiated by their capacity to respond to the transglutaminase-synthesized gamma-(glutamyl5)spermine derivative of substance P.
AU Esposito C; Mancuso F; Calignano A; Di Pierro P; Pucci P; Porta R
SO JOURNAL OF NEUROCHEMISTRY, (1995 Jul) 65 (1) 420-6.
Journal code: JAV. ISSN: 0022-3042.
AB Four different gamma-(glutamyl5)amine derivatives of substance P (SP) were synthesized in vitro in the presence of purified guinea pig liver transglutaminase and Ca2+. The 1,3-diaminopropane, spermidine, spermine (Spm), and monodansylcadaverine adducts of the neuropeptide were purified by HPLC on a reversed-phase column and characterized by fast atom bombardment mass spectrometry. The gamma-(glutamyl5)Spm derivative of SP (Spm-SP) was found to be able, like the parent neuropeptide, to provoke rabbit aorta relaxation, to decrease rat arterial blood pressure, and to inhibit collagen-induced platelet aggregation. Unlike SP, only a weak inflammatory response was observed when Spm-SP was injected in the rat hind limb. All these effects were found to be prevented by N omega-nitro-L-arginine methyl ester, a well-known nitric oxide synthesis inhibitor. In contrast, Spm-SP was completely ineffective in contracting guinea pig ileal segments, thus confirming our preliminary observations indicating that Spm-SP does not evoke SP-like spasmogenic effects on isolated smooth muscle preparations. The specificity of the effects due to the selective introduction of a Spm moiety at the glutamine5 level was demonstrated by the SP agonist pharmacological profile of the other gamma-(glutamyl5)amine derivatives tested. These results suggest that neurokinin receptors could be differentiated by their capacity to respond to Spm-SP.

L91 ANSWER 7 OF 34 MEDLINE
AN 95275713 MEDLINE
TI Extravasation of macromolecules and possible trapping of transforming growth factor-beta in venous ulceration.
AU Higley H R; Ksander G A; Gerhardt C O; Falanga V
SO BRITISH JOURNAL OF DERMATOLOGY, (1995 Jan) 132 (1) 79-85.
Journal code: AW0. ISSN: 0007-0963.
AB The pathogenesis of venous ulceration is thought to involve formation of pericapillary fibrin cuffs as a result of venous hypertension, and a recent hypothesis suggests that extravasated plasma proteins may bind or trap growth factors. We have compared

trypsin treatment of cell lysates, is expressed at a high level in primary culture. The other one is up-regulated upon retinoic acid treatment, preferentially cytosolic and inactivated upon trypsin treatment of cell lysates. The rate of expression of the TGase down-regulated by RA seems to correlate with the differentiation state of the chondrocyte. This suggests that this TGase activity may have a physiological role in cartilage and merits further study.

L91 ANSWER 9 OF 34 MEDLINE
AN 95251649 MEDLINE
TI Genes up-regulated in hypertrophied ventricle.
AU Iwai N; Shimoike H; Kinoshita M
SO BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (1995 Apr 17) 209 (2) 527-34.
Journal code: 9Y8. ISSN: 0006-291X.
AB We isolated 8 genes whose expression is modulated during cardiac development. The expressions of 6 of these eight genes were modulated during the development of cardiac hypertrophy and/or during the transition to heart failure. In particular, the expression levels of the pro alpha-1 collagen, tissue type II transglutaminase, and vimentin genes were markedly increased during the transition to heart failure. Up-regulation of the pro alpha-1 collagen and vimentin genes may reflect activation of interstitial cells during the transition to heart failure. Up-regulation of the tissue type II transglutaminase gene during the transition to heart failure is intriguing, since this enzyme has been suggested to be involved in the activation of latent TGF-beta.

L91 ANSWER 10 OF 34 MEDLINE
AN 95116876 MEDLINE
TI The retrocuspid papilla and factor XIIIa: an epidemiologic and histomorphologic study.
AU Hedin C A; Gerner L; Larsson A
SO SCANDINAVIAN JOURNAL OF DENTAL RESEARCH, (1994 Oct) 102 (5) 290-4.
Journal code: UCQ. ISSN: 0029-845X.
AB The retrocuspid papilla (RCP) is a poorly recognized entity. In one part of our study, we found 10 cases of lesions clinically compatible with RCP in 1150 consecutively examined patients. In another part of the study, we found 15 cases of RCP in more than 2000 consecutive cases of oral mucosal hyperplasia submitted as surgical biopsies during 1989-92. The lesions were situated in the attached gingiva, lingual to the two mandibular canines, often bilaterally. They were covered by normal pink mucosa with a size and a height each of 2-3 mm. Histologically, the RCP was a broad-based, often downfolded hyperplasia, covered with a parakeratinized epithelium of normal thickness. The rete pegs were often elongated and blunt, frequently bent inward toward the center. The lamina propria was mostly composed of a loosely arranged, delicate, fibrous connective tissue. The lesions could be classified into two groups

antibodies. RESULTS: CD34+ cells were few or absent in the lesions of scleroderma, while a number of CD34+ cells were found in the lesions of other collagen diseases and in normal skin. In contrast, large numbers of factor XIIIa-and procollagen-positive cells were noted in the lesions of scleroderma. Even in the study in which cryostat sections were used, CD34+ cells were totally absent from the lesions of scleroderma, while there were numerous proline-4-hydroxylase-positive cells. Furthermore, although detectable in the clinically uninvolved skin of these patients, CD34+ cells were less frequent and more slender than those in normal skin. CONCLUSION: Immunohistologic staining with anti-CD34 and other antibodies to dermal spindle-shaped cells demonstrated a selective disappearance of CD34+ spindle-shaped cells from the lesions of scleroderma. It suggests that CD34+ cells might be important target cells in the autoreactive phenomenon in scleroderma.

L91 ANSWER 13 OF 34 MEDLINE
AN 94159754 MEDLINE
TI Effect of putrescine on tissue transglutaminase activity in wounds: decreased breaking strength and increased matrix fucoprotein solubility.
AU Dolynchuk K N; Bendor-Samuel R; Bowness J M
SO PLASTIC AND RECONSTRUCTIVE SURGERY, (1994 Mar) 93 (3) 567-73. Journal code: P9S. ISSN: 0032-1052.
AB Topical application of putrescine, a transglutaminase inhibitor, for 3 days directly to rat skin wounds produced a significant average decrease of 48 percent in wound breaking strength in test animals from 8 pairs studied between day 5 and day 10 after wounding. No external or systemic toxic effects of putrescine were seen with localized topical application of 50 mM putrescine for 3 days in any of the test rats (n = 12), and no systemic toxicity was seen in rabbits (n = 4) after topical exposure to 50 mM putrescine for 3 weeks. Quantitation of tritiated fucose incorporation in rat wound explants from 10 pairs of rats revealed that a significant overall decrease in radiolabeled glycoprotein production of 23 percent occurred when putrescine was present; in addition, the fraction of tritiated glycoprotein which was soluble in buffer was significantly increased, while that in the buffer-insoluble fraction decreased. This study suggests that putrescine inhibits tissue transglutaminase-mediated cross-linking of fucoprotein in the extracellular wound matrix and supports a role for this process in the generation of incisional wound strength.

L91 ANSWER 14 OF 34 MEDLINE
AN 94154261 MEDLINE
TI Factor XIIIa binding to activated platelets is mediated through activation of glycoprotein IIb-IIIa.
AU Cox A D; Devine D V
SO BLOOD, (1994 Feb 15) 83 (4) 1006-16.

collagen-fibronectin-collagen cross-links, the contraction of the vitreous in this case can be attributed to the formation of similar cross-links.

L91 ANSWER 16 OF 34 MEDLINE
AN 93322269 MEDLINE
TI Rat tracheal epithelial cell differentiation in vitro.
AU Kaartinen L; Nettesheim P; Adler K B; Randell S H
SO IN VITRO CELLULAR AND DEVELOPMENTAL BIOLOGY. ANIMAL, (1993 Jun) 29A (6) 481-92.
Journal code: BZE. ISSN: 1071-2690.
AB In vitro culture conditions enabling rat tracheal epithelial (RTE) cells to differentiate to mucociliary, mucous, or squamous phenotypes are described. Medium composition for rapid cell growth to confluence in membrane insert cultures was determined, and the effects of major modifiers of differentiation were tested. Retinoic acid (RA), collagen gel substratum, and an air-liquid interface at the level of the cell layer were required for expression of a mucociliary phenotype which most closely approximated the morphology of the tracheal epithelium in vivo. Large quantities of high molecular weight, hyaluronidase-resistant glycoconjugates, most likely mucin glycoproteins, were produced in the presence of RA when the cells were grown with or without a collagen gel and in submerged as well as in interface cultures. However, extensive ciliagenesis was dependent on the simultaneous presence of RA, collagen gel, and an air-liquid interface. When RA was omitted from the media, the cells became stratified squamous and developed a cornified apical layer in air-liquid interface cultures. This phenotype was accompanied by loss of transglutaminase (TGase) type II and keratin 18 and expression of the squamous markers TGase type I and keratin 13. The ability to modulate RTE cell phenotypes in culture will facilitate future studies investigating molecular regulation of tracheal cell proliferation, differentiation, and function.

L91 ANSWER 17 OF 34 MEDLINE
AN 93111519 MEDLINE
TI Comparative light-microscopic and immunohistochemical study of traumatic and palisaded encapsulated neuromas of the skin.
AU Argenyi Z B; Santa Cruz D; Bromley C
SO AMERICAN JOURNAL OF DERMATOPATHOLOGY, (1992 Dec) 14 (6) 504-10.
Journal code: 35V. ISSN: 0193-1091.
AB The primary hyperplastic nature of palisaded encapsulated neuromas (PENs) has been recently challenged by suggesting a traumatic origin. We studied eight cases of traumatic neuroma (TN) and 12 cases of PEN by routine light-microscopic, histochemical, and immunohistochemical methods to assess evidence of previous tissue injury. Sections from the formalin-fixed, paraffin-embedded tissue were stained with hematoxylin-eosin, trichrome, elastic, reticulin, Giemsa, colloidal iron (with and without hyaluronidase), and

running within cords of Dupuytren's fascia. Quantitative analysis of transglutaminase revealed that activity levels were significantly higher in acutely contracting fascia than in chronic contractures. The results show that contractures in Dupuytren's fascia may be reflected by the level of transglutaminase activity in the tissue. Furthermore, it is suggested that isopeptide bond formation, involving collagen type III aminopropeptide moieties, may be the biochemical mechanism by which transglutaminase maintains the contracted state.

L91 ANSWER 20 OF 34 MEDLINE
AN 92012099 MEDLINE
TI Immunohistochemical study of the distribution of collagens (type I, III, IV), fibronectin, factor XIIIa and factor VIII related antigen in alcoholic liver disease.
AU Shimazaki Y; Hara F
SO NIPPON IKA DAIGAKU ZASSHI. JOURNAL OF THE NIPPON MEDICAL SCHOOL, (1991 Aug) 58 (4) 74-83.
Journal code: HRD. ISSN: 0048-0444.
AB Histopathological changes in alcoholic liver disease are characterized by Mallory body, fatty liver, and peculiar fibrosis such as pericentral fibrosis, pericellular fibrosis, stellate fibrosis originating from Glisson's sheath, and swelling of the liver cells. However, the mechanism of fibrosis remains unknown. The author tried to demonstrate, by the immunohistochemical method, fibronectin (FN), collagen type I, III, IV (IC, IIIC, IVC), factor XIIIa, and factor VIII related antigen (VIII RAg), all of which are related to the process of wound healing, in order to clarify the mechanism of fibrosis in alcoholic liver disease. With the progress of fibrosis, FN was demonstrated in the sinusoidal wall, as well as the portal areas and around the central veins. IC and IIIC were positive in the fibrotic area extending into the lobules and pericellular fibrosis. IVC was similar to FN and was positive in the sinusoidal wall. Scattered XIIIa positivity was recognized in the fibrotic areas, especially in the foci of active fibrosis. VIII RAg was positive in the capillary vessels invading the lobules through the limiting plates. The distribution of these proteins in the fibrotic area in alcoholic liver disease closely resembled that in the wound healing process. It is concluded that fibrosis occurring in the periportal area is essentially the same as in the wound healing process and the mechanism of fibrosis in alcoholic liver disease is thought to be active fibroplasia.

L91 ANSWER 21 OF 34 MEDLINE
AN 91198092 MEDLINE
TI Factor XIII of blood coagulation decreases the susceptibility of collagen precursors to proteolysis.
AU Paye M; Nusgens B; Lapi`ere C M
SO BIOCHIMICA ET BIOPHYSICA ACTA, (1991 Apr 9) 1073 (3) 437-41.

SO JOURNAL OF CUTANEOUS PATHOLOGY, (1990 Aug) 17 (4) 252-4.
Journal code: HWM. ISSN: 0303-6987.

L91 ANSWER 24 OF 34 MEDLINE
AN 90343762 MEDLINE
TI Lipoprotein binding of crosslinked type III collagen aminopropeptide and fractions of its antigen in blood.
AU Bowness J M; Tarr A H
SO BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (1990 Jul 31) 170 (2) 519-25.
Journal code: 9Y8. ISSN: 0006-291X.
AB When [125I] labelled bovine type III collagen aminopropeptide (PIIIP) is incubated with tissue transglutaminase (TGase) mixed with hyperlipemic rabbit plasma and subjected to ultracentrifugation the labelled fraction with density less than 1.2 g/ml is larger than when either lipoprotein or TGase is omitted. Chromatography of the fraction with density less than 1.2 g/ml shows the presence of peaks which are not present in the denser material. Since their elution positions indicate that they have higher molecular weights than PIIIP it is concluded that they consist of [125I]PIIIP which had been crosslinked by TGase and bound to lipoprotein. Low concentrations of similar low density, high molecular weight PIIIP antigens were found in normal human plasma and pooled sera from angiography subjects. In two out of seven infarct patients an unusually large fraction of the PIIIP antigen in the serum was found in a very high molecular weight peak containing low density material. It is speculated that this may arise from atherosclerotic lesions.

L91 ANSWER 25 OF 34 MEDLINE
AN 90308753 MEDLINE
TI Distribution of factor XIIIa-containing cells and collagenous components in radicular cysts: histochemic and immunohistochemic studies.
AU Toida M; Tsai C S; Okumura Y; Tatematsu N; Oka N
SO JOURNAL OF ORAL PATHOLOGY AND MEDICINE, (1990 Apr) 19 (4) 155-9.
Journal code: JRF. ISSN: 0904-2512.
AB The distribution of subunit A of Factor XIII (FXIIIa) and of collagenous components was investigated by the avidin-biotin-peroxidase complex (ABC) method for FXIIIa and by the Sirius red F3BA method, respectively, in 43 cases of radicular cysts. Besides the covering epithelial layer, the radicular cyst wall was composed of the following three layers: an inner granulomatous layer, an outer fibrous connective tissue layer, and an intermediate layer. In each layer, a positive reaction for FXIIIa was observed in certain connective tissue cells. These FXIIIa-containing cells were few in number in the inner layer where collagenous components were also sparse. In the slightly to moderately fibrous intermediate layer, these cells markedly increased in number and were dendritic or

centrifugation and they are insoluble on washing with 1% SDS. Ultracentrifugation showed that a significant fraction of [3H]procollagen III forms a low density complex on incubation with transglutaminase plus excess IDL or LDL, but not HDL. SDS polyacrylamide gel electrophoresis showed that type III collagen [125I]aminopropeptide forms high molecular weight compounds after incubation with transglutaminase plus excess IDL or LDL but not with HDL. It is hypothesized that, in the presence of excessive concentrations of LDL and/or fibrinogen and of tissue transglutaminase, crosslinking reactions of the type demonstrated may interfere with normal injury-repair processes and stimulate the formation of atherosclerotic lesions in arteries.

L91 ANSWER 28 OF 34 MEDLINE
AN 89229058 MEDLINE
TI Complexation of fibronectin with tissue transglutaminase.
AU Turner P M; Lorand L
SO BIOCHEMISTRY, (1989 Jan 24) 28 (2) 628-35.
Journal code: A0G. ISSN: 0006-2960.
AB Previous work [Lorand, L., Dailey, J. E., & Turner, P. M. (1988) Proc. Natl. Acad. Sci. U.S.A. 85, 1057-1059] showed that fibronectin might serve as a specific carrier for transglutaminases accidentally discharged from erythrocytes or other cells into plasma. In the present study we examined the association of these proteins in purified systems. Complexation was readily demonstrable by nondenaturing electrophoresis, using dansylcadaverine-dependent activity staining as well as immunoblotting procedures, and also by HPLC gel filtration. The results indicate a stoichiometry of 2:1 for the binding of the human erythrocyte transglutaminase (80K) to human plasma fibronectin (440K). The attachment is noncovalent in nature and does not involve cross-linking of the proteins either to themselves or to each other. Binding occurs in the absence of Ca2+, suggesting that a domain on the transglutaminase molecule other than the catalytic site is needed for complexation with fibronectin. Limited proteolysis with chymotrypsin for delineating the relevant region in fibronectin yielded two gelatin- (collagen) binding fragments (56K and 46K), each displaying affinity for transglutaminase. Moreover, these fragments--like intact fibronectin--bound erythrocyte transglutaminase and gelatin simultaneously in ternary complexes.

L91 ANSWER 29 OF 34 MEDLINE
AN 88183361 MEDLINE
TI Subcellular localization of transglutaminase. Effect of collagen.
AU Juprelle-Soret M; Wattiaux-De Coninck S; Wattiaux R
SO BIOCHEMICAL JOURNAL, (1988 Mar 1) 250 (2) 421-7.
Journal code: 9YO. ISSN: 0264-6021.
AB 1. The subcellular distribution of transglutaminase was investigated by using the analytical approach of differential and isopycnic

in tracheas of vitamin A-deficient hamsters. Treatment with retinoic acid not only blocked squamous differentiation as evidenced by the inhibition of the biochemical markers for squamous differentiation but induced the appearance of columnar, polarized cells many of which contained secretory granules. These granules stained positively with periodic acid thiocarbohydrazide and certain lectins indicating the presence of glycoconjugates. Analysis of radiolabeled glycoconjugates released into the medium indicated the synthesis of mucous glycoproteins. It appears that retinoic acid determines the pathway of differentiation whereas the collagen gel matrix is permissive for the expression of both phenotypes. The morphological and biochemical similarities between this in vitro cell system and the normal and metaplastic tracheal epithelium suggest that this rabbit tracheal epithelial cell system is a useful and relevant model to study the regulation of differentiation of the tracheobronchial epithelium.

L91 ANSWER 31 OF 34 MEDLINE
AN 87188954 MEDLINE
TI Components of increased labelling with putrescine and fucose during healing of skin wounds.
AU Bowness J M; Henteleff H; Dolynchuk K N
SO CONNECTIVE TISSUE RESEARCH, (1987) 16 (1) 57-70.
Journal code: DQH. ISSN: 0300-8207.
AB To study the glycoproteins and transglutaminase substrates involved in healing, wounds were made in the skin of anesthetized rats with a biopsy punch. Explants made 1-5 days later were incubated with [3H]-labelled putrescine, fucose or proline. As compared with unwounded skin there was an increased incorporation of label which was greatest at 3 days. Incubation for various times suggests that the incorporation of fucose and proline is dependent on protein synthesis, whereas putrescine is incorporated into preformed proteins. Putrescine and fucose label polypeptides with an Mr of about 45,000 before and 14,000 after reduction. These correspond in size with the aminopropeptide of type III collagen. Other labelled material of higher molecular weight is partly degraded to similar polypeptides on collagenase digestion. Much of the [3H]putrescine in the polypeptides is in the form of gamma-glutamyl putrescine. It is hypothesized that isopeptide linkage of the aminopropeptide III occurs in wound healing.

L91 ANSWER 32 OF 34 MEDLINE
AN 87109206 MEDLINE
TI Identification of a substrate site for liver transglutaminase on the aminopropeptide of type III collagen.
AU Bowness J M; Folk J E; Timpl R
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1987 Jan 25) 262 (3) 1022-4.
Journal code: HIV. ISSN: 0021-9258.
AB The aminopropeptide of type III collagen incorporates [3H]putrescine

AU Saito Y; Imada T; Takagi J; Kikuchi T; Inada Y
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1986 Jan 25) 261 (3) 1355-8.
Journal code: HIV. ISSN: 0021-9258.
AB We have studied the binding of collagen fibers with platelet proteins using affinity chromatography on collagen-Sepharose. Only a few proteins from a platelet lysate were trapped by this column. When denatured collagen (gelatin) was used as the affinity ligand, the major protein did not bind and was identified as platelet Factor XIII by polyacrylamide gel electrophoresis, immunoprecipitation, and enzymic activity. This is a zymogen form of transglutaminase, which corresponds to the "a" subunit of the coagulation factor in plasma. Immunoglobulins specific for platelet Factor XIII obtained from antiserum raised against plasma Factor XIII were able to initiate platelet aggregation by themselves, in strong contrast to nonspecific antibodies. This specific immunoglobulin-mediated platelet aggregation required the presence of Ca2+. It was inhibited by aspirin and prostacyclin, but not by specific inhibitors for other agonists. These data suggest the possibility that the zymogen form of Factor XIII is located on the surface of platelets and may play a key role as the receptor for collagen-induced platelet aggregation.

FILE 'CA' ENTERED AT 16:47:12 ON 22 MAY 96
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT

FILE 'CAPLUS' ENTERED AT 16:47:12 ON 22 MAY 96
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT

=> s dolynchuck ?/au and (wound? or scar?) -Author
L92 0 FILE CA
L93 0 FILE CAPLUS

TOTAL FOR ALL FILES
L94 0 DOLYNCHUCK ?/AU AND (WOUND? OR SCAR?)

=> e dolynchuck/au 5
E1 2 DOLYAN G G/AU
E2 2 DOLYE PETER/AU
E3 0 --> DOLYNCHUCK/AU
E4 4 DOLYNCHUK KENNETH N/AU
E5 2 DOLYNCHUK KENNETH NICHOLAS/AU

=> s dolynchuk k?/au and (wound? or scar?)
L95 4 FILE CA
L96 4 FILE CAPLUS

Searcher : Shears 308-4994

From: Diss. Abstr. Int. B 1988, 48(11), 3271-2
DT Dissertation
LA English
AB Unavailable

L101 ANSWER 3 OF 3 CA COPYRIGHT 1996 ACS DUPLICATE 3
AN 95:166599 CA
TI The early metabolism of noncollagenous glycoproteins during **wound** healing
AU **Dolynchuk, Kenneth N.**; Bowness, J. Michael
CS Fac. Med., Univ. Manitoba, Winnipeg, MB, R3E OW3, Can.
SO J. Surg. Res. (1981), 31(3), 218-24
CODEN: JSGRA2; ISSN: 0022-4804
DT Journal
LA English
AB Rats were sacrificed at various times after full-thickness **wounding** and plugs of normal and **wounded** skin were obtained. The plugs were incubated with either [3H]fucose and Na235SO4 or [3H]proline and Na235SO4 and various insol. tissue fractions were assayed for incorporation of radioactivity. The biosynthetic capacities of the **wound** plugs for collagen and glycosaminoglycans peaked at day 5 after **wounding**. However, the incorporation of fucose into urea/dithiothreitol(DDT)-extractable glycoprotein and of proline into collagenase-resistant protein gave significant peaks at day 3. The incorporation of fucose into the residue from the urea/DDT extn. was increased at days 1-3. Thus, healing **wounds** develop their max. capacity to produce noncollagenous insol. glycoproteins before their max. capacity for collagen biosynthesis. These data suggest that fucosylated structural glycoproteins form a bridge in both time and space between the fibrin clot and the appearance of collagen in the **wound**.

FILE 'BIOSIS' ENTERED AT 16:50:16 ON 22 MAY 96
COPYRIGHT (C) 1996 BIOSIS(R)

FILE 'MEDLINE' ENTERED AT 16:50:16 ON 22 MAY 96

FILE 'EMBASE' ENTERED AT 16:50:16 ON 22 MAY 96

FILE 'LIFESCI' ENTERED AT 16:50:16 ON 22 MAY 96
COPYRIGHT (C) 1996 Cambridge Scientific Abstracts (CSA)

FILE 'BIOTECHDS' ENTERED AT 16:50:16 ON 22 MAY 96
COPYRIGHT (C) 1996 DERWENT INFORMATION LTD

Searcher : Shears 308-4994

CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 9406
AB Topical application of putrescine, a transglutaminase inhibitor, for 3 days directly to rat skin **wounds** produced a significant average decrease of 48 percent in **wound** breaking strength in test animals from 8 pairs studied between day 5 and day 10 after **wounding**. No external or systemic toxic effects of putrescine were seen with localized topical application of 50 mM putrescine for 3 days in any of the test rats (n = 12), and no systemic toxicity was seen in rabbits (n = 4) after topical exposure to 50 mM putrescine for 3 weeks. Quantitation of tritiated fucose incorporation in rat **wound** explants from 10 pairs of rats revealed that a significant overall decrease in radiolabeled glycoprotein production of 23 percent occurred when putrescine was present; in addition, the fraction of tritiated glycoprotein which was soluble in buffer was significantly increased, while that in the buffer-insoluble fraction decreased. This study suggests that putrescine inhibits tissue transglutaminase-mediated cross-linking of fucoprotein in the extracellular **wound** matrix and supports a role for this process in the generation of incisional **wound** strength.

L124 ANSWER 5 OF 7 WPIDS COPYRIGHT 1996 DERWENT INFORMATION LTD
AN 93-351223 [44] WPIDS
DNC C93-155815
TI Compsn. comprising a non-toxic trans-glutaminase inhibitor e.g. putrescine - used for treating **scar** tissue.
DC B05
IN BOWNESS, J M; **DOLYNCHUK, K N**
PA (UYMA-N) UNIV MANITOBA
CYC 38
PI WO 9318760 A1 930930 (9344)* EN 22 pp
RW: AT BE CH DE DK ES FR GB GR IT LU MC NL OA SE
W: AU BB BG BR CA CS FI HU JP KP KR LK MG MN MW NO PL RO RU SD UA US
AU 9215448 A 931021 (9407)#
EP 632723 A1 950111 (9506) EN
R: AT BE CH DE DK ES FR GB GR IT LI LU MC NL SE
JP 07504154 W 950511 (9527)
BR 9207109 A 951212 (9606)
ADT WO 9318760 A1 WO 92-CA123 920323; AU 9215448 A AU 92-15448 920323; EP 632723 A1 EP 92-906696 920323, WO 92-CA123 920323; JP 07504154 W JP 92-506324 920323, WO 92-CA123 920323; BR 9207109 A BR 92-7109 920323, WO 92-CA123 920323
FDT AU 9215448 A Based on WO 9318760; EP 632723 A1 Based on WO 9318760; JP 07504154 W Based on WO 9318760; BR 9207109 A Based on WO 9318760

plugs of normal and **wounded** skin were obtained with a 4 mm dermal biopsy punch. The plugs were incubated with [3H]fucose and Na235SO4 or [3H]proline and Na235SO4 and, after homogenization, various insoluble tissue fractions were assayed for incorporation of radioactivity. The biosynthetic capacities of the **wound** plugs for collagen and glycosaminoglycans peaked at day 5 after **wounding** but the incorporation of [3H]fucose into urea/DDT-extractable glycoprotein and of [3H]proline into collagenase-resistant protein both gave significant peaks at day 3. The incorporation of [3H]fucose into the residue from urea/DDT extraction was increased at days 1-3.

FILE 'HOME' ENTERED AT 16:51:48 ON 22 MAY 96